FIG. 1

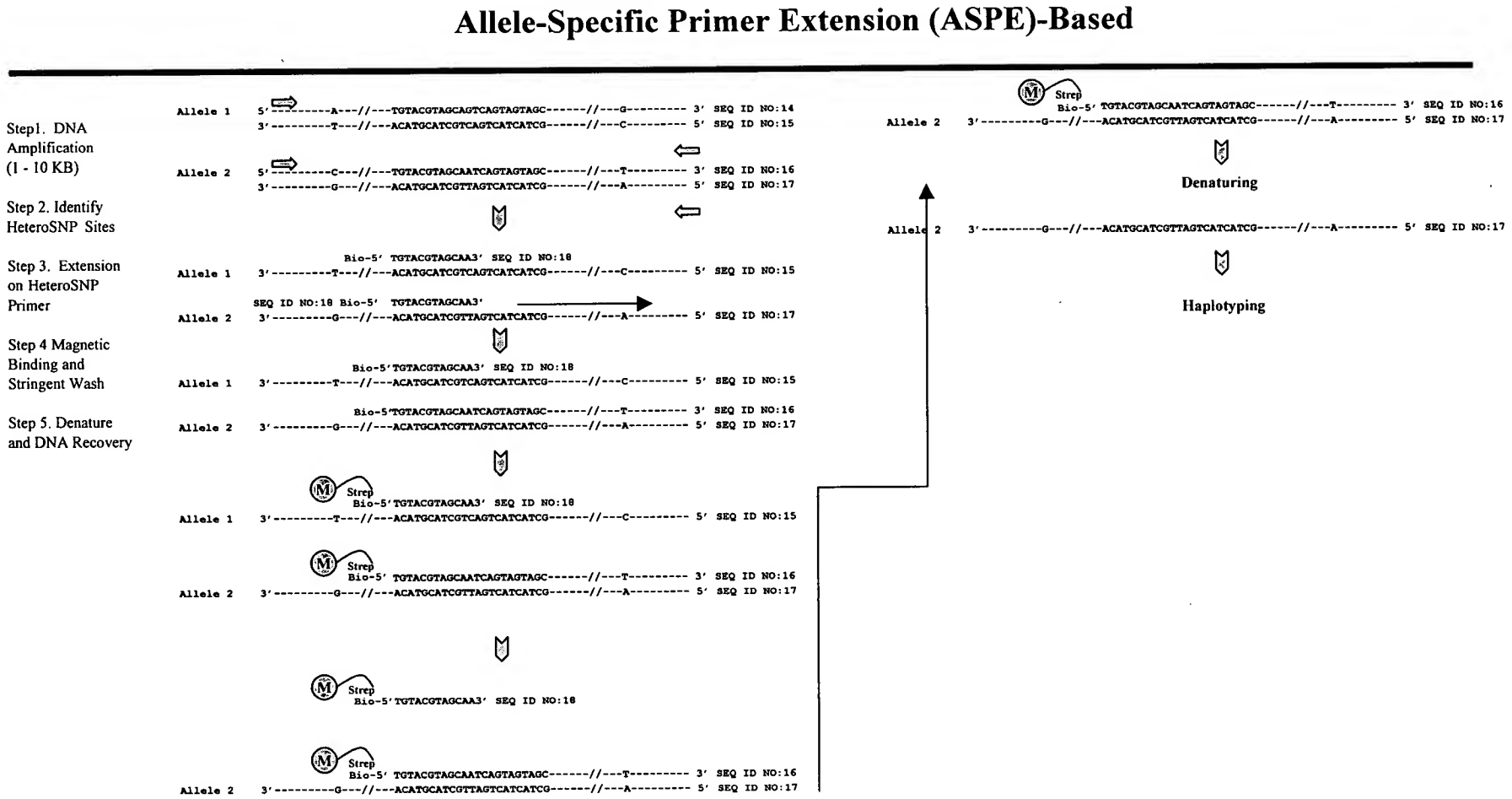

Allele-Specific Primer Extension (ASPE)-Based
Step1. DNA Amplification (1 - 10 KB)
Step 2. Identify HeteroSNP Sites
Step 3. Extension on HeteroSNP Primer
Step 4 Magnetic Binding and Stringent Wash
Step 5. Denature and DNA Recovery
Allele 1 5'---------A---//---TGTACGTAGCAGTCAGTAGTAGC------//---G--------- 3' SEQ ID NO:14
3'---------T---//---ACATGCATCGTCAGTCATCATCG------//---C--------- 5' SEQ ID NO:15
Allele 2 5'---------C---//---TGTACGTAGCAATCAGTAGTAGC------//---T--------- 3' SEQ ID NO:16
3'---------G---//---ACATGCATCGTTAGTCATCATCG------//---A--------- 5' SEQ ID NO:17
Bio-5' TGTACGTAGCAA3' SEQ ID NO:18
Allele 1 3'---------T---//---ACATGCATCGTCAGTCATCATCG------//---C--------- 5' SEQ ID NO:15
SEQ ID NO:18 Bio-5' TGTACGTAGCAA3'
Allele 2 3'---------G---//---ACATGCATCGTTAGTCATCATCG------//---A--------- 5' SEQ ID NO:17
Bio-5'TGTACGTAGCAA3' SEQ ID NO:18
Allele 1 3'---------T---//---ACATGCATCGTCAGTCATCATCG------//---C--------- 5' SEQ ID NO:15
Bio-5'TGTACGTAGCAATCAGTAGTAGC------//---T--------- 3' SEQ ID NO:16
Allele 2 3'---------G---//---ACATGCATCGTTAGTCATCATCG------//---A--------- 5' SEQ ID NO:17
Strep
Bio-5'TGTACGTAGCAA3' SEQ ID NO:18
Allele 1 3'---------T---//---ACATGCATCGTCAGTCATCATCG------//---C--------- 5' SEQ ID NO:15
Strep
Bio-5' TGTACGTAGCAATCAGTAGTAGC------//---T--------- 3' SEQ ID NO:16
Allele 2 3'---------G---//---ACATGCATCGTTAGTCATCATCG------//---A--------- 5' SEQ ID NO:17
Strep
Bio-5'TGTACGTAGCAA3' SEQ ID NO:18
Strep
Bio-5' TGTACGTAGCAATCAGTAGTAGC------//---T--------- 3' SEQ ID NO:16
Allele 2 3'---------G---//---ACATGCATCGTTAGTCATCATCG------//---A--------- 5' SEQ ID NO:17
Strep
Bio-5' TGTACGTAGCAATCAGTAGTAGC------//---T--------- 3' SEQ ID NO:16
Allele 2 3'---------G---//---ACATGCATCGTTAGTCATCATCG------//---A--------- 5' SEQ ID NO:17
Denaturing
Allele 2 3'---------G---//---ACATGCATCGTTAGTCATCATCG------//---A--------- 5' SEQ ID NO:17
Haplotyping

FIG. 2A

Allele-Specific Ligation/PrimerSizeTag-Based

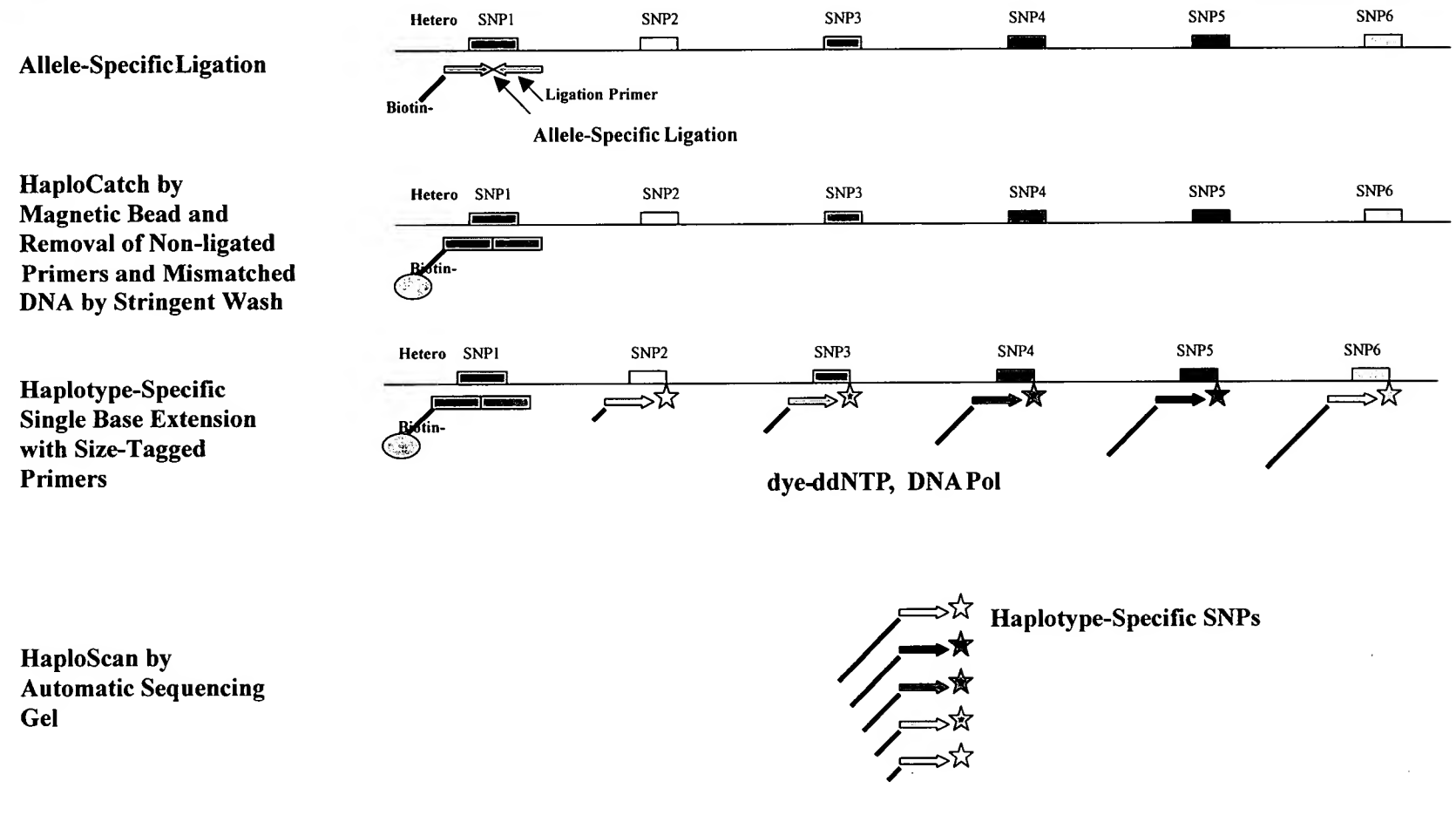


FIG. 2B

Single Base Extension/PrimerSizeTag-Based

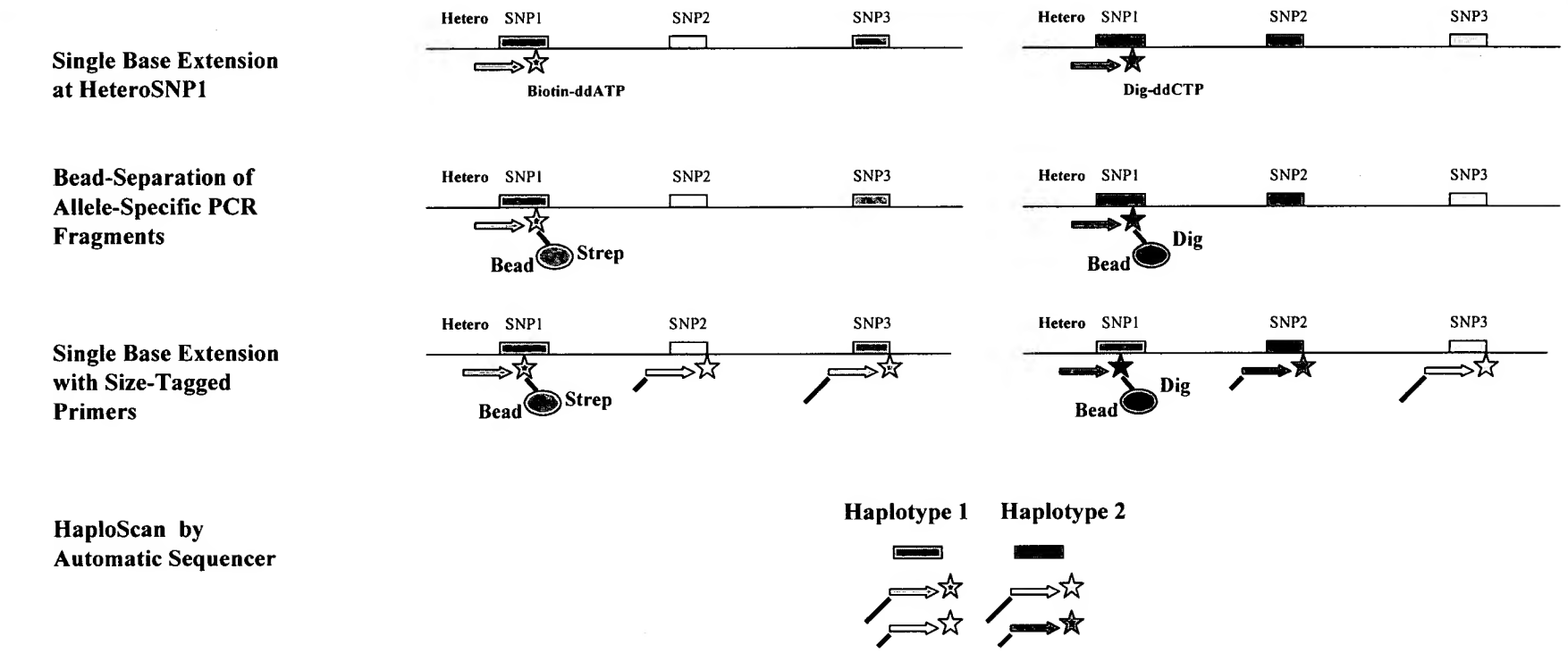
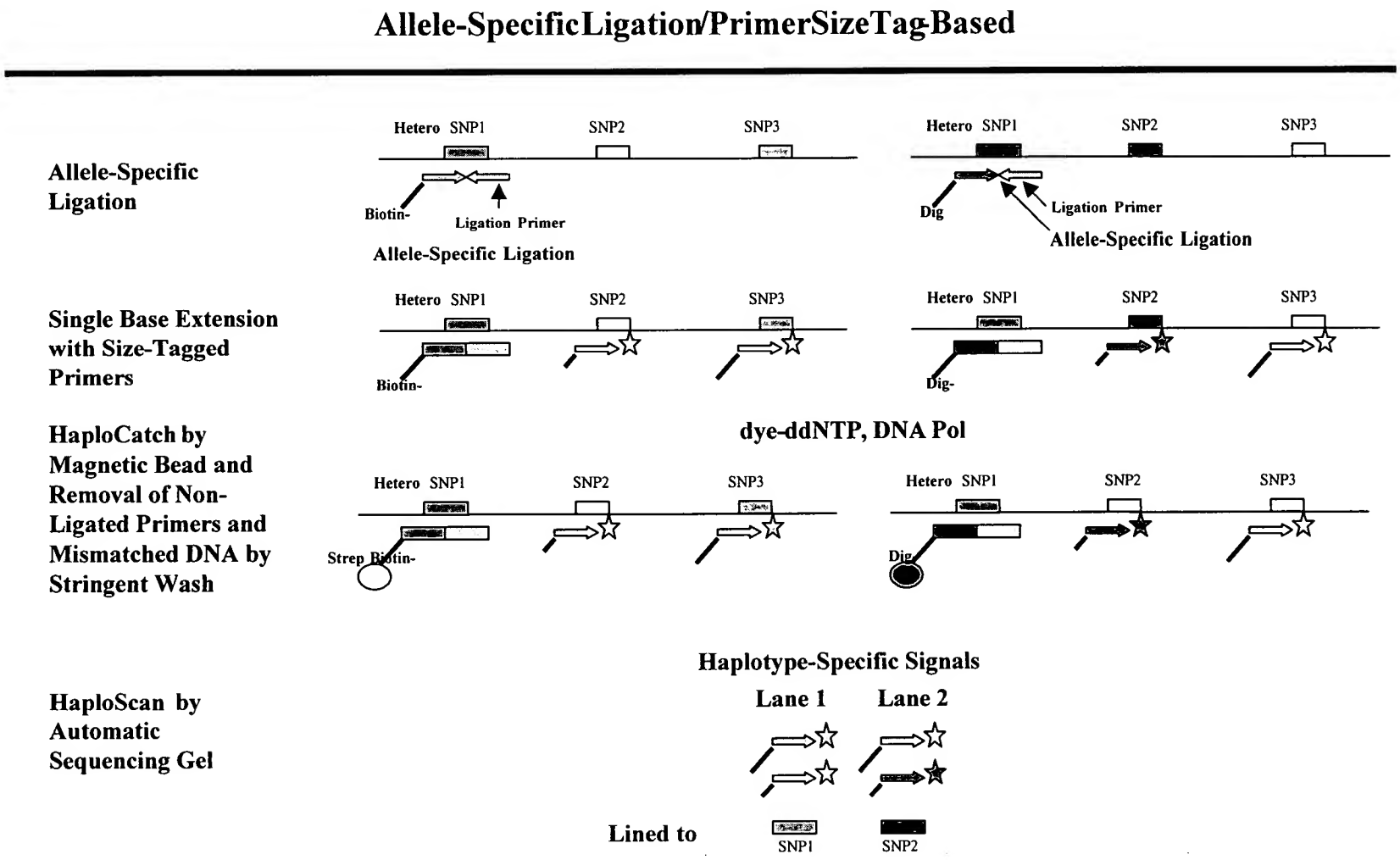


FIG. 3


Allele-SpecificLigation/PrimerSizeTag-Based
Allele-Specific Ligation
Hetero SNP1
SNP2
SNP3
Biotin-
Ligation Primer
Allele-Specific Ligation
Hetero SNP1
SNP2
SNP3
Dig
Ligation Primer
Allele-Specific Ligation
Single Base Extension with Size-Tagged Primers
Hetero SNP1
SNP2
SNP3
Biotin-
Hetero SNP1
SNP2
SNP3
Dig-
dye-ddNTP, DNA Pol
HaploCatch by Magnetic Bead and Removal of Non-Ligated Primers and Mismatched DNA by Stringent Wash
Hetero SNP1
SNP2
SNP3
Strep Biotin-
Hetero SNP1
SNP2
SNP3
Dig
Haplotype-Specific Signals
HaploScan by Automatic Sequencing Gel
Lane 1
Lane 2
Lined to
SNP1
SNP2